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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,730	07/28/2003	Takeshi Yagi	240825US8	3833

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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER	
CHIEM, DINH D	

ART UNIT	PAPER NUMBER
2883	

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/627,730	YAGI ET AL.	
	Examiner	Art Unit	
	Erin D Chiem	2883	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9 and 12-15* is/are pending in the application.

4a) Of the above claim(s) *10-11* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7 and 12-15* is/are rejected.

7)☒ Claim(s) *8-9* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12/01/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3, 7 and 13-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Hebgen et al (US 6,711,332 B2). Regarding claim 1 and 13, Hebgen et al. disclose of a dispersion compensating module comprising of a first dispersion compensating fiber (DCF) **31** having a negative first dispersion value (Fig. 7) and a negative first dispersion slope (Fig. 8); a second dispersion compensating fiber (DCF) **32** having a negative second dispersion value (Fig. 7) and a negative second dispersion slope (Fig. 8); a jointing unit that serially joins the first DCF and the second DCF (Fig. 11); wherein the first dispersion slope changes a long an upwardly convex curve as the wavelength change and the second dispersion slope changes along a downwardly convex curve as the wavelength changes.

3. Regarding claims 3 and 4, Fig. 11 shows a bobbin in which the DCFs 31 and 32 are wound around.

4. Regarding the characteristics of the DCFs claimed in 7 and 13-15. In col. 14 line 8-9, Hebgen et al. disclose the total dispersion is more negative than –200 ps/nm-km. This meet the limitation because due to the representation of the km unit as oppose to the

applicant's representation of ps/nm/km. Furthermore, in col. 7 line 7-8 and 13-14, Hebgen et al. disclose the characteristics described in claim 14 and 15, wherein the cumulative dispersion of the transmission optical fiber is between –75 and –375 ps/nm-km and the absolute value of the dispersion slope is about 0.07 and 0.1 ps/nm^2-km. Again, the different notation of the unit renders these values being larger by three orders.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hebgen et al. (US 6,711,332 B2) in view of Koike et al. (US 2002/004749 A1). Hebgen et al. disclose of a dispersion compensating module comprising of a first dispersion compensating fiber (DCF) **31** having a negative first dispersion value (Fig. 7) and a negative first dispersion slope (Fig. 8); a second dispersion compensating fiber (DCF) **32** having a negative second dispersion value (Fig. 7) and a negative second dispersion slope (Fig. 8); a jointing unit that serially joins the first DCF and the second DCF (Fig. 11); wherein the first dispersion slope changes a long an upwardly convex curve as the wavelength change and the second dispersion slope changes along a downwardly convex curve as the wavelength changes. But Hebgen et al. do not disclose the jointing unit is fusion-splicing and further comprising a protection unit around the jointing unit made of ultraviolet cured resin.

7. Koike et al. disclose fusing two DCF together employing the method of fusion splicing and furthermore protects the splice with a resin **[0004] [0005]** for the purpose of protecting the fusion splice since the outer protection is stripped in order for the splice to occur between two fibers and leaving the glass exposed.

8. Since Hebgen et al. and Koike et al. are both from the same field of endeavor, the purpose disclosed by Koike et al. would have been recognized in the pertinent art of Hebgen et al.

9. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to first use fusion splicing to permanently couple two DCFs together for coupling efficiency and second to protect the exposed glass due to the splicing process in which the outer protection of the fiber is stripped. The protection provides is a coating of ultraviolet cured resin around the exposed glass and onto the remaining protective covering of the fibers.

10. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hebgen et al. (US 6,711,332 B2) in view of Gruner-Nielsen et al. (US 2002/0181912 A1). Hebgen et al. disclose of a dispersion compensating module comprising of a first dispersion compensating fiber (DCF) **31** having a negative first dispersion value (Fig. 7) and a negative first dispersion slope (Fig. 8); a second dispersion compensating fiber (DCF) **32** having a negative second dispersion value (Fig. 7) and a negative second dispersion slope (Fig. 8); a jointing unit that serially joins the first DCF and the second DCF (Fig. 11); wherein the first dispersion slope changes a long an upwardly convex curve as the wavelength change and the second dispersion slope changes along a downwardly convex

curve as the wavelength changes. But Hebgen et al. do not disclose the two DCFs having a function to be equipped with Raman amplifier.

11. Gruner-Nielsen et al. disclose a dispersion compensation module further includes amplification means such as an Erbium doped fiber amplifier (EDFA) or apparatus for reverse pumping the DC fiber itself with optical energy at different wavelength(s) to achieve Raman amplification for the purpose employing an inexpensive, operational at all wavelengths, and use of transmission line itself as an amplification method.

12. Since Hebgen et al. and Gruner-Nielsen et al. are both from the same field of endeavor, the purpose disclosed by Gruner-Nielsen et al. would have been recognized in the pertinent art of Hebgen et al.

13. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to equip the dispersion compensation module with a Raman amplifier for the purpose employing an inexpensive, operational at all wavelengths, and use of transmission line itself as an amplification method

Allowable Subject Matter

14. Claims 8 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

15. The following is an examiner's statement of reasons for allowance: applicant claimed specific equations which are not ~~searchable to find~~ found in the prior art.

JYJ 1-24-05

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erin D Chiem whose telephone number is (571) 272-3102. The examiner can normally be reached on Monday - Thursday 9AM - 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Erin D Chiem
Examiner
Art Unit 2883

edc

Frank G. Font
Supervisory Patent Examiner
Technology Center 2800